

2. On the Cteniform Spiders of Africa, Arabia, and Syria.

By FREDK. O. PICKARD CAMBRIDGE, B.A.

[Received November 15, 1897.]

(Plates III. & IV.)

CONTENTS.

I. Two-clawed Cteniform Spiders.

a. Introduction, p. 13.

b. Bibliography, p. 13.

c. List of Species already described, with Notes on their Identities,
p. 14.

d. Descriptions of New Species, p. 20.

II. Three-clawed Cteniform Spiders.

a. Introduction, p. 27.

b. List of Species already described, with Notes on their Identities,
p. 28.

c. Descriptions of New Species, p. 29.

I. a. *Introduction.*

The following pages include a note on every species belonging to the *Cteniform* Spiders which have been described from Africa and Western Asia, besides descriptions of eight new species of the two-clawed form and four of the three-clawed form. On page 351¹ of my paper on the *Ctenidae* of Burmah I expressed myself as "satisfied that one cannot restore Thorell's genus *Dolopœus* for the Eastern Asiatic forms" of the three-clawed specimens. Since this was written, however, more material has come to hand, which enables me to reverse my decision in this respect. The following list contains the names of the new species described:—

- Ctenus johnstoni*, sp. n. Zomba, Lake Nyassa.
 ,, *kingsleyi*, sp. n. Cameroons, W. Africa.
 ,, *occidentalis*, sp. n. W. Africa.
 ,, *spenceri*, sp. n. E. London, S. Africa.
 ,, *carsoni*, sp. n. Tanganyika, &c.
 ,, *burtoni*, sp. n. Cameroons, W. Africa.
 ,, *marshalli*, sp. n. Umfuli River, S. Africa.
 ,, *corniger*, sp. n. Natal, S. Africa.
Thalassius jayakari, sp. n. Muscat, Arabia.
 ,, *cunningi*, sp. n. Fao, Persian Gulf.
 ,, *phipsoni*, sp. n. Dorun, India.
 ,, *spenceri*, sp. n. E. London, S. Africa.

I. b. *Bibliography.*

1833. M. PERTY. Del. Anim. Braz. (Spix and Martius). Brazil.
 1837. C. A. WALCKENAER. Ins. Apt. i. p. 364. S. Africa.
 1865. J. BLACKWALL. Ann. Mag. N. H. (3) xvi. p. 336. Africa.

¹ Ann. Mag. Nat. Hist. (6) xx. Oct. 1897.

1866. J. BLACKWALL. *Ann. Mag. N. H.* (3) xviii. p. 451. Africa.
 1872. O. PICKARD CAMBRIDGE. *Proc. Zool. Soc.* 1872, p. 320.
 Palestine.
 1873. E. GERSTÄCKER. *Von der Decken's Reisen in Ost-Africa*,
 iii. 2, p. 483. Africa.
 1875. L. KOCH. *Aegypt. und Abyssin. Araneiden*, p. 84. Egypt.
 1876. EUGÈNE SIMON. *Bull. Soc. Zool. Fr.* p. 222. R. Congo.
 1876. O. PICKARD CAMBRIDGE. *Proc. Zool. Soc.* 1876, p. 596.
 Egypt.
 1879. F. KARSCH. *Zeits. ges. Nat.* p. 347. W. Africa.
 1884. EUGÈNE SIMON. *Ann. Mus. Genov.* xx. p. 326.
 Egypt and Abyssinia, Congo, Cape of Good Hope.
 1885. EUGÈNE SIMON. *Bull. Soc. Zool. Fr.* p. 13. Africa.
 1886. H. LENZ. *Zool. Jahrbuch*, i. p. 379. Madagascar.
 1889. EUGÈNE SIMON. *Ann. Soc. Ent. Fr.* p. 233. Mazotte.
 1891. H. LENZ. *Jahrbuch Hamburg. Wissen. Anstalt*, ix. p. 170.
 Madagascar.
 1895. H. BÖSENBERG. *Jahrbuch Hamburg. Wissen. Anstalt*, xii.
 p. 12. East Africa.
 1896. EUGÈNE SIMON. *Ann. Soc. Ent. Fr.* lxxv. p. 465.
 1897 (Feb. 15th). EUGÈNE SIMON. *Hist. Nat. Ar.* éd. 2, tome ii.
 fasc. i. p. 104.
 1897 (Jan.). FREDK. CAMBRIDGE. *Ann. Mag. Nat. Hist.* (6) xix.
 p. 52.
 1897 (Oct.). FREDK. CAMBRIDGE. *Ann. Mag. Nat. Hist.* (6) xix.
 pp. 329-356.

I. c. *List of Species already described, with Notes on
 their Identities.*

1837. *Ctenus fimbriatus* Walck. *Insect. Apt.* i. p. 364. Cape of
 Good Hope.
 1865. *Ctenus velox* Blackw. *Ann. Mag. Nat. Hist.* (3) xvi. p. 336.
 Nyassa and Zambesi.
 1865. *Ctenus vividus* Blackw. *Ann. Mag. Nat. Hist.* (3) xvi.
 p. 336. Nyassa and Zambesi.
 1866. *Ctenus vagus* Blackw. *Ann. Mag. Nat. Hist.* (3) xviii.
 p. 451. Africa.
 1872. *Ctenus syriacus* Cambr. 'Spiders of Palestine,' p. 320.
 Jordan Plains.
 1875. *Ctenus pallidus* L. Koch. *Aegypt. u. Abyss. Ar.* p. 84,
 vii. 7. Habab, Egypt.
 1879. *Ctenus spinosissimus* Karsch. *Zeits. f. d. ges. Nat.* t. lii.
 p. 345. Congo.
 1884. *Ctenus torvus* Pav. *Ann. Mus. Genova*, xx. p. 74. Shoa.
 1896. *Ctenus modestus* E. Sim. Sub *Leptoctenus*. *Ann. Soc. Ent.*
Fr. lxxv. p. 492. Zanzibar, East Africa.
 1896. *Ctenus pulchrivertris* E. Sim. Sub *Leptoctenus*. *Ann. Soc.*
Ent. Fr. lxxv. p. 493. South Africa.
 1896. *Ctenus lycosinus* E. Sim. Sub *Leptoctenus*. *Ann. Soc. Ent.*
Fr. lxxv. p. 494. West Africa, Rio Pungo.

1896. *Ctenus aculeatus* E. Sim. Sub *Leptoctenus*. Ann. Soc. Ent. Fr. lxx. p. 494. West Africa, Rio Pungo.
1873. *Phoneutria decora* Gers. Von der Decken's 'Reisen in Ost-Africa,' iii. 2, p. 483, pl. viii. fig. 7. Mbaramu.
1876. *Phoneutria erythrochelis* E. Sim. Bull. Soc. Zool. Fr. i. p. 222. Landana, Congo.
1879. *Phoneutria auricularis* Karsch. Zeitschr. ges. Nat. p. 347. West Africa.
1879. *Phoneutria capulina* Karsch. Zeitschr. ges. Nat. p. 348. West Africa.
1886. *Phoneutria fasciata* Lenz. Zool. Jahrbuch, i. pp. 379-408. Isl. Nossi-Bé, Madagascar.
1895. *Phoneutria melanogastra* Bösenb. Jahrbuch Hamburg. Wissen. Anstalt, xii. p. 12 (sep. copy), t. i. f. 14-14 d. E. Africa.
1895. *Phoneutria debilis* Pav. Ann. Mus. Genova, xxxv. p. 523. Galla Country, East Africa.
1896. *Caloctenus guineensis* E. Sim. Ann. Soc. Ent. Fr. lxx. p. 496. Sierra Leone.
1896. *Anahita lineata* E. Sim. Ann. Soc. Ent. Fr. lxx. p. 497. Landana, Congo.
1896. *Anahita lurida* E. Sim. Ann. Soc. Ent. Fr. lxx. p. 497. Sierra Leone, Rio Pungo.

CTENUS FIMBRIATUS Walk.

♀. *Hab.* Cape of Good Hope.—This is a three-clawed form which has been selected by M. Simon as the type of *Thalassius* (*Titurius*), Sim.

CTENUS VELOX Bl. (Plate III. figs. 1, 2.)

♀. 20 mm. Adt. Type in coll. O. P. C. *Hab.* Zanzibar, S.E. Africa.

♀. Total length 20 mm. Cap. 10 × 8. Legs absent. Pat. + tib. i. 13—iv. 13·5. Prot. iv. 12·5.

Colour. Abdomen brown freckled with yellowish grey, with a broad dentated yellow band, bordered with black, along the dorsal area, comprising a longitudinal anterior yellow band. Ventral area black anteriorly, with two unequal white oval spots.

Structure. Eyes of second row straight; line passing through centres of centrals cuts posterior margin of laterals. Ocular quadrangle broader than long, broader behind. Eyes closer together, otherwise similar to those of allied forms.

The *vulva* consists of a long, dark, chitinous, raised, central tongue, dilate before the middle, slightly emarginate and again broadly dilate, depressed in front, convex in middle, again depressed behind; slightly but broadly grooved in centre longitudinally. Sides rugulose or impunctate, fringed with fine pale hairs. Posterior angles of tongue guarded on each side by a stout, slightly curved, blunt spur, black on margins, convex at apex, its

base set with a tuft of fine clustered pale hairs, curving inwards and backwards.

This form, of which two adult females remain, is obviously quite distinct from *C. vagus* and *C. vividus*, and from every other South-African forms which have come before me. I have taken this opportunity of redescribing and figuring the species, since the original descriptions are inadequate.

CTENUS VIVIDUS Bl.

♀ juv. 25 mm. Type in coll. O. P. C. *Hab.* S.E. Africa.

♀. Total length 25 mm. Cap. 13×10. Legs: i. 49—ii. 45, iii. —, iv. 49. Pat. + tib. i. 17—iii. 11, iv. 15. Prot. i. 11—iii. 8—iv. 8.

Colour. Carapace brown, with a broad yellowish-brown band (whose superior margin is somewhat dentated) extending along each side, and a narrow longitudinal one in the middle. Abdomen pale yellow, streaked and spotted with brown. A broad dentated, dull yellow band bordered with brown, and comprising a longitudinal row of brown spots, extends along the dorsal surface, and on each side is a series of brown spots.

Structure. Tib. i. and ii. with 2—2—2—2 spines beneath; one or two lateral external basal spines; one lateral internal basal spine. Patellæ i. and ii. sometimes with, sometimes without lateral spines, iii. and iv. with one small spine on each side. Prot. i. and ii. with 2—2—2 spines beneath, and a single small central apical spine beneath. *Eyes.* Second row almost straight by anterior margins, laterals slightly behind; otherwise the eye-formula is the same as in *C. vagus* Bl. Clypeus $1\frac{1}{2}$ diameters of anterior central eye.

Out of thirteen examples of this species from the relics of Mr. Blackwall's collection, there is not, unfortunately, a single adult specimen. Except in the difference in the height of the clypeus, and a slight difference in the curvature of the second row of eyes, these two forms, *C. vividus* and *C. vagus*, are exceedingly alike.

CTENUS VAGUS Bl.

♀ juv. 33 mm. Type in coll. O. P. C. *Hab.* Zambesi, S. Africa.

♀. Total length 33 mm. Cap. 16×12. Legs, i. 55—ii. 49·5—iii. 42—iv. 56. Pat. + tib. i. 19·5—iii. 13—iv. 17. Prot. i. 12—iv. 15.

Colour. The specimen being very old the colour is merely a uniform yellow-brown. Abdomen densely covered with brownish-yellow hairs, having a series of broad, curved, angular lines of a brown colour, with their convex sides towards each other and their vertices directed forwards.

Structure. Tib. i. and ii. with 2—2—2—2—2 spines beneath; 1—1 outside, lateral; 1 inside lateral, basal. Prot. i. and ii. with 2—2—2 spines beneath, and a single small central apical spine beneath. Patellæ i., ii., iii., and iv. with a single small spine on each side. *Eyes.* Second row straight by anterior margins; diameter of centrals more than three times transverse diameter of laterals.

Centrals $\frac{1}{2}$ diameter apart. Laterals 1 transverse diameter from centrals, over one transverse diameter from lateral posteriors. Diameter of lateral posteriors $\frac{1}{4}$ less than of central posteriors, one diameter from them. Ocular quadrangle broader than long, broader behind. Posterior $\frac{1}{3}$ larger than anteriors (by diameters). Anteriors $\frac{2}{3}$ diameter apart, $\frac{3}{4}$ a diameter from posteriors. Clypeus two diameters of anterior central eye. Inferior margin of fang-groove with four stout teeth, superior with three. Tarsals claws 2.

This fine Spider is unfortunately immature, but is obviously closely allied to the males taken in the Nyassan district of S.E. Africa, described below (p. 21) as *C. johnstoni*. The colours in the type specimen have faded, and I have therefore given the characters as described by Blackwall. I am indebted to the Rev. O. P. Cambridge for kindly allowing me to examine this and others of Blackwall's types.

CTENUS SYRIACUS O. P. Cambr.

♀ juv. 4.5 mm. *Hab.* Plains of Jordan. P. Z. S. 1872, p. 320.

There is no evidence from the description that this form belongs to *Thalassius* (*Titurius*), as Simon suggests. No mention being made of the number of subtibial spines or the number of tarsal claws or teeth on the fang-groove, it is impossible to gather to what genus it belongs.

Having carefully examined the type, however, there is no doubt that this form is two-clawed, with four teeth on the inferior margin of the fang-groove. The eye-formula is of the usual *ctenoid* character, and not that of *Thalassius*. Tibiæ i. and ii. with 2—2—2—2—2 spines beneath, the last pair not apical.

The type is, however, a very young female, and, further than that it belongs to one or other of the various subdivisions of the genus *Ctenus*, one cannot say anything more definite concerning it.

CTENUS PALLIDUS L. Koch. ♀.

Carap. 4 mm. Legs: i. 13 mm.—ii. 10.5 mm.—iii. 12.5 mm.—iv. 16 mm. *Hab.* Abyssinia.

“Die Beine 4. 1. 2. 3.”—“Die beiden Klauen am Tarsus der ersten und zweiten Beinpaares mit je zwei kurzen Zähnen”—“dritten und vierten Paares—mit drei bis vier äusserst kleinen Zähnen.”—“Am vorderen Falzrande zwei, am hinteren sechs Zähne, die drei obersten der letzteren sehr klein.”—“Mit *Ctenus syriacus*, Cambr., ist *Ctenus pallidus* jedenfalls nahe verwandt, doch sind in der Farbe und Zeichnung so wesentliche Unterschiede vorhanden, das kaum angenommen werden kann, beide möchten eine und dieselbe Species sein.”

There appears to me to be no sufficient reason for regarding this form as congeneric with *Titurius* (*Thalassius*, Sim.), as Simon supposés, Ann. Mus. Genov. xx. p. 326.

CTENUS SPINOSISSIMUS Karsch.

Hab. Congo, W. Africa.

It is exceedingly difficult to grasp the characters from Dr. PROC. ZOOL. SOC.—1898, No. II. 2

Karsch's descriptions and figures, and one cannot therefore be sure of the identity of this species.

CTENUS TORVUS Pavesi.

♂ 16.5, ♀ 20 mm. Ann. Mus. Gen. xx. p. 74. Shoa, Abyssinia.

I have not seen this species, and cannot therefore give an opinion as to its affinities.

Cteni modestus, *pulchriventris*, *lycosinus*, and *aculeatus* are described by M. Simon under *Leptoctenus* from various regions of Africa. I have not had an opportunity of examining the types, but, so far as one can judge from the descriptions, they are not identical with any of those already described or now described in this paper as new.

PHONEUTRIA DECORA Gerst.

♀ 22 mm. Hab. Mbaramu, E. Africa.

"Brunnea, cervino-pubescentis, cephalothoracis linea media duplici flavescenti, regione ocellari falciumque basi ferrugineo-villosis: palporum basi coxisque rufescentibus, femoribus supra nigro-maculatis."

"Am Endrande mit vier scharfen Zähnen bewehrt."

Whether this description was taken from an adult it is difficult to say, but no description or figure is given of the vulva. It may be possible to identify the species when more material from Mbaramu comes to hand, but even then with no great certainty.

PHONEUTRIA ERYTHROCHELIS E. Sim.

♂, carap. 15. Hab. Landana, Congo, W. Africa.

♂. Carap. 15 × 11. Legs: i. 55—ii. 47.5—iii. 39—iv. 53.

"Brunnea, fulvo-pubescentis, cephalothoracis linea media et vittis marginalibus dilutioribus, chelis coccineo-pubescentibus, pedibus fulvis immaculatis."

"Chelicères noires, revêtues en avant, dans leurs deux tiers inférieurs, de pubescence serrée, d'un rouge vif."

"Pat. et tib. iv. plus longs que le céphalothorax; mét. iv. plus long que le tibia des deux tiers de la patella."—"Patte mâchoire de même teinte que les pattes. Tibia sensiblement plus long, plus étroit à la base, légèrement et graduellement élargi, pourvu d'une apophyse terminale externe, presque perpendiculaire, relativement grêle, simple et plus courte que le diamètre de l'article."

No mention is made of the palpal organs. Simon regards it as different from *C. velox* Bl. and *C. vividus* Bl., since the falces are in these species yellow, while those of *P. erythrochelis* are red. It differs from *P. decora* Gerst. in the absence of femoral spots. It is extremely possible that the species is quite distinct from the Nyassa District forms, but one cannot regard the description alone, without figures, as quite sufficient for purposes of identification.

It is not at all likely that this form should be the only one with red falces.

PHONEUTRIA AURICULARIS Karsch.

Hab. W. Africa.

It is impossible to say from the description what this may be.

PHONEUTRIA MELANOASTRA Bösenb.

♂ 11 mm., ♀ 16 mm. *Hab.* E. Africa. Types in coll. Nat. Hist. Mus. Hamburg, coll. Stuhlmann.—Jahrbuch der Hamb. Wiss. Anstalt, xii. p. 12, Taf. i. 14–14 d.

The figure given of the eyes is, I believe, drawn from a point more from above, and the second row thus appears more strongly recurved; whereas I should suspect (for I have not seen the type) that a line passing through the centres of the centrals would at most pass through the centres of the laterals, and in this case the second row would be absolutely straight. A young female now before me, taken in E. Africa at Likipia by Dr. Gregory, is very closely allied to *P. melanogastra*, if not identical. Being immature, however, one cannot pronounce on the point with any certainty.

There appears to me to be no necessity for separating these forms from the rest of the *Ctenidae*, other than in more or less well-defined groups.

Curiously enough, there is now also before me an adult female with black ventral band precisely similar to that of *P. melanogastra* and of the female from Likipia, with similar eye-formula, differing only in the absence of a lateral spine on tib. i. and ii. and the absence of spines on pat. i. and ii., from La Plata, Argentina, taken by Mrs. Oldfield Thomas.

The African and American forms resemble each other very closely, with certain minute though constant differences, such as an extra spine on the legs or an extra minute tooth on the fang-groove. Those from the Indian Archipelago and Australia approximate to a certain type only of those in Africa and America, of which *C. spenceri* is a fair representative from the former, and *C. albofasciatus* from the latter continent.

So far as the material at hand allows one to judge, the large Ctenoid forms represented by *C. reidyi*, *C. andrewsi*, and *C. boliviensis* in America, and *C. vividus*, *C. kingsleyi*, &c. in Africa, are absent from India, Burmah, the Indian Archipelago, and Australasia. But I am unable to satisfy myself, so far, that there is any distinction sufficiently pronounced to justify one in giving to these two different groups distinct generic names.

An adult male from Umfuli, taken by Mr. G. A. Marshall, is evidently very closely allied to *P. melanogastra* B., being apparently precisely similar in markings. The figure given of the palpus in "ostafrikanische Specimen" is scarcely sufficiently detailed to enable one to decide with certainty on the point. Herr Bösenberg has, however, with his usual generosity, furnished me with a beautiful enlarged drawing of this important organ, and I am now able to assert positively that *P. melanogastra* Bg. is quite distinct from *P. marshalli*, n. sp.

PHONEUTRIA DEBILIS Pavesi.

♂, 11 mm. *Hab.* Arussi Galla, E. Africa.

♂. Carap. 5-5.5, tib. iv. 4-4.5.

“Occhi della seconda serie recurva equidistanti; mandibole, margine posteriore del solco unguicolare con 4 denti eguali, anteriore con 1 e 2 denti in basso.

“Palpi, tibia, e presso l'apice di un forte processo esterno, più lungo del diametro dell' articolo, a forma di spina di rosa, con la punta subitamente acuminata.

“Mandibole testacee, con due linee nere parallele sulla faccia anteriore, vestite di peli o setole nere.

“Zampe 4. 1. 2. 3 (i. 24 mm., ii. 22, iii. 18, iv. 24.5).”

This extract from Pavesi's description should enable an identification to be made.

I. d. *Descriptions of New Species.**Males.*

- A. Protarsi i. and ii. with a single spine at apex beneath.
- i. Size much larger, 31 mm. Tibiæ and protarsi clothed with thick silky yellow hairs *C. carsoni*, sp. n.
- ii. Size much smaller, 15-18 mm.
- a. Base of tarsal joint of palpus produced into a spur.
1. Spur long, curved, falciform, almost as long as the tibia *C. corniger*, sp. n.
2. Spur short, sharp, cuspidate *C. spenceri*, sp. n.
- b. Base of tarsal joint of palpus simple *C. marshalli*, sp. n.
- B. Protarsi i. and ii. without apical spine beneath *C. hurtoni*, sp. n.

Females.

- A. Protarsi i. and ii. with a single short, stout, apical spine beneath. Mandibles clothed with rufous-grey, yellow, or red hairs at the base in front.
- i. Carapace longer than protarsus iv.
- a. Mandibles rufous grey at base *C. johnstoni*, sp. n.
- b. Mandibles red or yellow at base.
1. Mandibles yellow at base *C. vividus* Blk.
2. Mandibles red at base *C. vagus* Blk.
- ii. Carapace shorter than protarsus iv. Mandibles densely clothed with yellow hairs at base in front *C. velox* Blk.
- B. Protarsi i. and ii. without any apical spine beneath. Mandibles black.
- i. Size larger, 30-33 mm.
- a. Carapace shorter than patella+tibia iii. and shorter than protarsus iv. Vulva much larger *C. kingsleyi*, sp. n.
- b. Carapace longer than patella+tibia iii. and equal to protarsus iv. Vulva much smaller. *C. occidentalis*, sp. n.
- ii. Size smaller, 23 mm. (Carapace longer than protarsus iv.) *C. spenceri*, sp. n.

CTENUS JOHNSTONI, sp. n. (Plate III. fig. 7.)

♀. 37·8. *Hab.* Zomba, Lake Nyassa, E. Africa. Type in coll. Brit. Mus. Nat. Hist. London.

Total length 37·8. Carap. 18×14. Anter. marg. 8. Prot. i. 13—iv. 16·25.

Colour. Mandibles with basal half clothed with thick rufous-grey pubescence. Abdomen clothed entirely with rufous pubescence, ochre-yellow on legs. There would be nothing, save in the difference in the eye-formula, to distinguish this form from the male from the Cameroons. The colour of the mandibles is identical. There is present in this female the basal inner and outer spine on the anterior tibiae as well as the single small spine at apex of protarsi i. and ii. beneath.

Vulva. See Plate III. fig. 7.

The eye-formula is similar to that of the male mentioned above, except that the laterals of the second row are higher and the lateral posteriors further from centrals.

Whether this difference is more than sexual, I have not sufficient material on which to base a definite decision, but I should suspect not.

Three females from E. Africa, two being from Lake Nyassa, Zomba, were found in the Museum collection, presented by Sir Harry Johnston.

CTENUS KINGSLEYI, sp. n. (Plate III. fig. 6.)

♀. 30 mm. *Hab.* Cameroons; coll. Kingsley. Type in coll. Brit. Mus. Nat. Hist. London.

♀. Carap. 14·75×11. Legs 4, 1, 2, 3—i. 60·5—ii. 56—iii. 48—iv. 63. Pat. + tib. i. 21. Pat. + tib. iii. 15·5. Pat. + tib. iv. 19. Prot. i. 13, iv. 17·5.

♀. *Colour.* Carapace mahogany-brown, clothed with short grey pubescence. Mandibles entirely black, clothed with short black hairs, rufous on inner apical margin. Legs clothed with short black and grey hairs and rufous-yellow pubescence. Abdomen unicolorous warm brown, with indistinct dentate dorsal longitudinal pattern, with narrow central dark band beneath bordered with a white line. The face bears a narrow band of rufous pubescence on each side of the ocular area.

Structure. Carapace horizontal, slightly gibbous behind, slightly inclined to base.

Eyes. Second row straight. Line passing through centres of posterior centrals cutting posterior margins of laterals. Diameters of centrals nearly 4 times the transverse diameters of laterals, $\frac{1}{2}$ a diameter apart, $\frac{1}{4}$ a diameter from laterals. Posterior laterals $\frac{1}{3}$ smaller (by diameters) than centrals, $1\frac{1}{4}$ diameters from the latter. Ocular quadrangle broader than long, narrower in front; posteriors $\frac{1}{3}$ larger; anteriors $\frac{2}{3}$ a diameter apart, the same from posteriors. *Clypeus* two full diameters of anterior central eye. *Lower margin* of fang-groove with four stout teeth, upper with three.

Spinulation of legs. Similar to the male of *C. carsoni*, but with

only a single lateral spine on inner basal half of tibia, and no dorsal tibial spines, while the single small apical central inferior protarsal spine is absent.

Vulva. For form of this organ, see Plate III. fig. 6.

The single female specimen from the Cameroons is obviously of a different species, so far as the material at hand enables one to judge, from the male taken by Capt. Burton in the same district. The eye-formula approaches more nearly that of *carsoni*, and though it differs again from this species in this respect one must not speak too confidently of differences which are possibly only sexual. That this form is, however, specifically distinct from *carsoni*, I have not the smallest doubt. The specimen described above was taken by Miss Kingsley.

CTENUS OCCIDENTALIS, sp. n. (Plate III. fig. 8.)

♀. 32 mm. *Hab.* W. Africa. Type in coll. Brit. Mus. Nat. Hist. London.

♀. Total length 33 mm. Carap. 15 × 11. Legs 4, 1, 2, 3—i. 53·5—ii. 50—iii. 42—iv. 57. Pat. + tib. i. 18—iii. 13·5—iv. 17. Prot. i. 12—iv. 15.

♀. *Colour.* Carapace and legs mahogany-brown, clothed with short dull golden-yellow pubescence, no fringing hairs, or very few. Mandibles black throughout. Abdomen clothed with dull golden-yellow pubescence, with double series of 5–6 dorsal dark spots. Sides striped with longitudinal rows of pale spots. Ventral area with two short white stripes at the genital rima, and a long broken white stripe on each side reaching to the spinners. These stripes and spots are much more distinct than in *C. kingsleyi*.

Structure. Carapace horizontal, slightly gibbous behind, abruptly inclined to base.

Eyes. Second row straight by anterior margins. Diameter of centrals 3 times transverse diameter of laterals, $\frac{2}{3}$ a diameter apart, $\frac{1}{3}$ from laterals. Posterior laterals $\frac{1}{6}$ smaller (by diameters) than centrals, $1\frac{1}{4}$ diameters from them. *Ocular quadrangle* broader than long, narrower in front; posteriors $\frac{1}{3}$ larger, anteriors $\frac{2}{3}$ a diameter apart, $\frac{3}{4}$ a diameter from posteriors. *Clypeus* scarcely 2 diameters of anterior central eye. Lower margin of fang-groove with four stout teeth, upper with three.

Spinulation of legs. Similar to that of ♂ *C. carsoni*, but with single lateral spine on inner side of basal half of tib. i., 1—1 on inner basal side of tib. ii. No dorsal tibial spines and no single short apical inferior protarsal spine.

Vulva. See Plate III. fig. 8.

A single female was taken in W. Africa, hab. unknown. It can with *C. kingsleyi* be distinguished from the large species from East Africa by the absence of the protarsal apical spine, by the black mandibles, and of course by the form of the vulva. From *C. kingsleyi* it can be distinguished by its shorter legs, carapace longer than pat. + tib. iii., and the more numerous and distinct pale spots and lines beneath the abdomen; the cusps on each side

of the posterior margin of the vulva are in this species slender and subaculeate, in *C. kingsleyi* they are stout and broadly pointed.

CTENUS SPENCERI, sp. n. (Plate III. figs. 9, 10.)

♂. 18 mm. *Hab.* King William's Town, S. Africa. Type in coll. Brit. Mus.

Total length 15 mm. Carap. 8×6 . Legs: i. 31—ii. 28—iii. 24—iv. 33.

Carapace and legs pale mahogany-brown, clothed with grey pubescence. The former has a more conspicuous central grey band and a broad marginal band, its inner margin being serrate or scalloped. Abdomen with a dark shoulder-spot on each side anteriorly, followed to the spinners by a double series of four small pale spots, the first pair with a black ground. Ventral surface pale rufous-brown, centre dusky with a series of four broken silvery lines, sometimes 6, and a pair of epigynal silvery spots.

Tibia of palpus with a long narrow blunt spur, its apex furnished with a short blunt cusp. Tarsus with a short sharp basal spur, its apex directed upward and slightly outward. Anterior central eyes much smaller and nearer together than the posterior centrals.

♀. Total length 23 mm. Carap. 9.5×7 . Legs: i. 31—ii. 29—iii. 26—iv. 34. Pat. + tib. i. 10.5 —iii. 8—iv. 10.5 . Prot. i. 6.5 —iii. 5.25 —iv. 9.

♀. *Colour.* Carapace dark brown, inclined to mahogany, with central narrow band of dull ochre pubescence, attenuate between eyes, dilate behind, again attenuate from central stria to base, and a broader marginal band of the same colour. *Legs* clothed with fine close ochre-yellow pubescence; femora with spots of white at base of spines above. *Abdomen* clothed with yellow-grey pubescence, with central series of indistinct Λ -shaped pale blotches, each branch having a dark spot at its apex.

Ventral area inclined to black, with oblique lateral rows of white spots, two short bars at genital rima, two broken lines between these and the spinners in the centre, and on each side a longer, more distinct broken line reaching to the spinners. *Mandibles* unicolorous black, clothed with grey hairs.

♀. *Structure.* Carapace horizontal, convex, scarcely gibbous behind, abruptly inclined to base. *Eyes.* Second row straight, line passing through centre of centrals touches posterior margin of laterals. Centrals four times greater (by diameters) than laterals; $\frac{1}{2}$ a diameter apart, $\frac{1}{8}$ from laterals. Posterior laterals $\frac{1}{8}$ less than centrals, 1 diameter from centrals, $\frac{2}{3}$ from lateral anteriors. Ocular quadrangle much (almost twice) broader than long, much narrower in front, width of anterior row less than half the width of posterior row; diameter of anteriors $\frac{1}{3}$ that of posteriors; the latter $\frac{1}{2}$ a diameter apart, the same from posteriors. *Clypeus* equal to one diameter of the anteriors. Spinulation of legs similar to that of *C. occidentalis*, except that tibia ii. has one,

not *two* spines on the inner side of the basal half. Inferior margin of fang-groove with four teeth, superior with three.

Vulva very simple, convex. See Plate III. fig. 9.

An adult male and four adult females were taken by Mr. H. A. Spencer at King William's Town, South Africa. Another female was taken by the same collector at East London, South Africa, while a single male was received from the collection of the Rev. O. Pickard Cambridge, taken at Natal, South Africa. In general characters this species inclines to resemble *C. kingsleyi* and *C. occidentalis*, but can easily be distinguished from these by the much greater difference in size between the central posterior and central anterior eyes, and also by the greater narrowness of the clypeus.

CTENUS CARSONI, sp. n. (Plate III. figs. 4 *a*, *b*, 5 *a-c*.)

♂. 31 mm. *Hab.* Mombasa, Victoria Nyanza, and Lake Tanganyika, coll. Carson, &c. Type in coll. Brit. Mus. Nat. Hist. London.

Total length 31 mm. Carap. 15 × 12. Anterior margin 5. Legs: i. 70, ii. 60, iii. 50, iv. 66. Tib. + pat. i. 2—3—5. Tib. + pat. iii. 14·5. Tib. + pat. iv. 19·5. Prot.: i. 17; iii. 12; iv. 18. Stern. 7 × 5·5.

Colour. Carapace mahogany red-brown, clothed with fine silky ochre-yellow pubescence. *Legs* the same as carapace, clothed with very fine silky, close, ochre-yellow pubescence and longer fringing ochre-yellow hairs, scarcely equal to the width of the segments. *Abdomen* dull ochre-brown, clothed with short silky ochre-yellow hairs, unicolorous. *Sternum* dark mahogany-brown. *Mandibles* clothed on basal half with ochre-yellow hairs, apical half less densely.

♂. *Structure.* Carapace longer than broad, narrowed abruptly at point in a line crossing just behind posterior lateral eyes; horizontal above, slightly gibbous behind, obliquely inclined to base. *Eyes* closely grouped, second row straight by anterior margin; centrals four times transverse diameter of laterals, less than $\frac{1}{4}$ a diameter apart, $\frac{1}{4}$ a diameter from laterals; posterior laterals $\frac{1}{6}$ smaller than centrals, $\frac{2}{3}$ a diameter from them. Ocular quadrangle much broader than long; anteriors much smaller, diameter a little over $\frac{1}{2}$ of that of posteriors, $\frac{2}{3}$ a diameter apart, $\frac{1}{2}$ a diameter from centrals. *Clypeus* equal to $1\frac{2}{3}$ diameters of anterior centrals. *Lower margin* of fang-groove with four stout short teeth, upper with three. *Labium* one half of maxillæ, scarcely longer than broad; maxillæ attenuate at base, dilate towards apex, outer side emarginate, rounded on outer apical margin, obliquely truncate on inner apical side.

Legs 1, 4, 2, 3. Femora spinous above. Patella of all four pairs with one short spine on each side. Tib. i. and ii. with 2—2—2—2 spines beneath, No. 4 pair slightly lateral, No. 5 apical, 1—1 (or only one) lateral spines. 1—1—1 dorsal spines. Protarsi i. and ii. with 2—2—2 spines beneath, No. 3 apical, and a single short central apical spine beneath. Protarsi and tarsi i. and ii. entirely

clothed beneath with thick scopulæ. Tib. iii. and iv. with 1—1—1 dorsal spines, besides lateral and inferior spines. Protarsi iii. and iv. spinose, inferior apical spines two. Claw-tuft present. Tarsal claws two.

Palpus. Tibia three times longer than broad, with short external apical black spur, having on each side at base a short distinct cusp. Tarsus piriform. Organs occupying whole breadth of tarsus, consisting of a broad flat chitinous disc, surrounded by a stout broad circumferential marginal piece, terminating at apex in an abruptly curved point, directed backward; and a central lobe, short, curved at base, dilate at apex, simple.

A fine male of this large silky-haired *Ctenus* was taken at Mombasa. Another male was taken by the late Emin Pasha on the southern shores of the Victoria Nyanza, while a third of the same sex was taken at Kavala Island on Lake Tanganyika by Mr. Carson. Two adult males were also obtained.

CTENUS BURTONI, sp. n. (Plate III. figs. 3 a-f.)

♂. 27 mm. *Hab.* Cameroons, W. Africa, coll. Burton. Type in coll. Brit. Mus. Nat. Hist. London.

Total length 27 mm. Carap. 12×9.5 . Legs 1, 4, 2, 3. Pat. + tib. i. 22.5. Pat. + tib. iii. 15. Pat. + tib. iv. 18. Prot. i. 17—iii. 13-25, iv. 19.5.

Structure and colour similar to those of *C. johnstoni*, except that the pubescence is rufous-yellow rather than ochre-yellow; while the basal half of the mandibles is clothed with rufous pubescence, strongly contrasting with the black apical half. *Abdomen* with narrow black central band, broad at genital rima, attenuate behind. *Eyes.* Second row straight, line passing through centres of posterior centrals falling just within posterior margin of laterals; centrals $\frac{2}{3}$ a diameter apart, $\frac{1}{3}$ a diameter from laterals, and twice the size, by transverse diameters; posterior laterals slightly smaller than centrals, over one diameter from them, situate on a black tubercle. Ocular quadrangle scarcely broader than long. Anterior side slightly shorter; central anteriors slightly smaller, $\frac{1}{3}$ a diameter apart, $\frac{1}{3}$ a diameter from posterior centrals. Clypeus one-half wider than diameter of anterior central eye.

Palpus two and a half times longer than broad, broader towards apex; external apical spur short, stout, abruptly curved, bifid at apex. Tarsus elongate-piriform, having at base on upper outer side a short, very stout, curved, sharp, conical spur, its point directed forward and outward. Organs occupying whole width of tarsus, having two stout central lobes, their apices curved towards each other, the outer being stouter, its point lying behind that of the inner, which is longer and more slender.

This western form, though obviously congeneric with the males from the Victoria Nyanza district, differs distinctly in the position of the eyes, and in the presence of a black band beneath the abdomen.

The tibial palpal spur and the organs are of course different

also. A single male was taken in the Cameroons by Capt. Burton. I cannot regard this as the male of the form taken by Miss Kingsley from the same district, since the ocular quadrangle offers differences which I believe will prove to be specific.

CTENUS MARSHALLI, sp. n. (Plate IV. figs. 12, 13.)

♂. 15 mm. *Hab.* Umfuli River, Mashonaland; coll. Marshall. Type in coll. Brit. Mus. Nat. Hist. London.

Total length 15 mm. Carap. 7×5.5 . Legs: i. 40—ii. 34.5—iii. 30—iv. 42. Pat. + tib. i. 13.5—iii. 9.5—iv. 12.5. Prot. i. 10—iv. 13.

Colour. Carapace brown, with very narrow yellow central band, or a pair of closely adjacent central lines of yellow pubescence, throwing off a short distinct branch on each side at central stria. Margins broadly clothed with pale pubescence, but not so close as in central lines. Legs testaceous yellow, clothed with fine hairs and yellow silky pubescence above. Mandibles black with grey hairs. Scopulæ dark brown. *Abdomen* shrivelled, but apparently no dark ventral area.

♂. *Structure* similar to that of *C. carsoni*, including the short apical protarsal inferior spine. Eyes as in *C. carsoni*.

Palpus. Tibia three times as long as broad. External apical apophysis black, broad, dilate at apex; inner angle prolonged and curved inward, outer angle rounded, irregular, with a short sharp spur at the base beneath. Organs very large, occupying whole tarsal width and three-quarters the length. Central lobe narrow, elongate, curved, rather excavate on inner side. A large stout apophysis runs halfway round the inner margin, excavate on inner side, trumpet-shaped at apex, with a black spine beneath; immediately in front of the trumpet-mouth lies a white, delicate, membranous, curved, fungiform process.

A single adult male was taken by Mr. G. A. Marshall on the Umfuli River, South Africa. It is very closely allied to *Phoneutria melanoastra* Bösb., but it is quite distinct.

CTENUS CORNIGER, sp. n. (Plate III. fig. 11.)

♂. 18 mm. Type in coll. O. P. C. *Hab.* Natal, S. Africa.

Total length 18. Carap. 10×7 . Legs i. 33—ii. 20—iii. 27—33.5. Pat. + tib. i. 12—iii. 8—iv. 10

♂. Carapace and legs deep mahogany-brown, clothed with silvery-white and yellow-red hairs. *Abdomen* clothed with rufous pubescence; with a pale patch at base above, followed to spinners by a double series of pale spots of pubescence. Ventral area pale rufous.

Tibial joint of palpus with a short broad process, emarginate or almost bifid at apex. Spur at base of tarsus long, curved, falciform, almost as long as the tibia: its apex sharp, abruptly curved outwards, directed across the apex of the tibial joint.

Anterior central eyes much smaller and nearer together than the posterior centrals.

A single adult male of this fine spider was kindly submitted to me for description by the Rev. O. Pickard Cambridge, who received it from Natal.

II. THREE-CLAWED CTENIFORM SPIDERS.

II. a. *Introduction.*

These spiders, including *Cupiennius*, Simon, *Lycotenus*, F. Cb., *Thalassius*, Simon, and *Dolopæus*, Thorell, will doubtless fall under the family *Pisauridæ*. The first two genera must, I think, be separated from the others under a different subfamily, for which I suggest the name *Lycoteniince*, while the other two will form a group under the subfamily *Dolomedince*. Of the habits of *Cupiennius* I cannot speak with certainty, though I should fancy that the spiders are probably more or less usually found in marshy, swampy places. Like other *Pisauridæ* they carry the egg-cocoon under the sternum. *Lycotenus* is essentially lacustrine in its habit, though, like *Dolomedes*, often found wandering long distances from its headquarters.

The habits of the two other genera *Dolopæus* and *Thalassius* are also similar, the spiders themselves very much resembling an elongate *Dolomedes*. The marking of the European *Dolomedes fimbriatus* with elongate bands of dull yellow having much the same disposition as those present in these two genera may be accounted for, possibly, by the fact that this arrangement of colour renders them exceedingly difficult to observe when crouched lengthwise along the stem or blade of the fading, yellow-tinted sedge-grass.

Mr. Cumming has contributed a valuable note on the habit of *Thalassius*, taken on the Persian Gulf (see p. 31).

The genera may be distinguished as follows:—

Genera.

- | | |
|---|----------------------------|
| <p>A. Central anterior eyes distinctly larger than central posteriors. Clypeus about equal to length of ocular quadrangle. Tibiæ of first pair of legs much longer (by half) than carapace. Lateral pale bands on carapace very broad, extending to the margin</p> | <p>DOLOPÆUS, Thor.</p> |
| <p>B. Central anterior eyes not larger than central posteriors. Clypeus, in height, equal to the length of ocular quadrangle. Tibiæ of first pair of legs as long or slightly shorter than carapace. Lateral pale bands on carapace narrow and remote from the margin; sometimes absent</p> | <p>THALASSIUS, E. Sim.</p> |

Genus DOLOPÆUS, Thor.

(*Dolomedes*, Doleschall.)

Generic Diagnosis. The same as *Thalassius* except as indicated in the differential table.

Type *D. cinctus* Thor., ♀ ad. K. Svenska Vet.-Akad. Handl. xxiv. no. 2, p. 60. (Plate IV. figs. 6, 7.)

I have not seen the type nor examples of the species, but I have before me immature specimens identified by Thorell as *D. albo-cinctus* Dol. (sub *Thalassius*), which present all the characters by which *Dolopæus* may be separated from *Thalassius*; while Thorell's description of the eyes of *D. cinctus* also indicates the same difference. Thorell considered his *Dolopæus* to be identical with *Thalassius*, and on pp. 350 and 351 of my paper on Eastern Cteniform Spiders, Ann. Mag. Nat. Hist. ser. 6, xx. 1897, I came to the same conclusion. An examination of fresh material has, however, led me to believe that the original differentiation will hold good, and I am very glad to be able to recharacterize and restore Dr. Thorell's genus.

Females.

- | | |
|--|--|
| i. Legs short and not fringed on the last two segments with feathery hairs | <i>D. doleschallii</i> , sp. n. |
| ii. Legs long and fringed on the last two segments with feathery hairs | <i>D. simoni</i> , sp. n. |
| I am unable to satisfy myself as to the identity of these two species | { <i>D. albocinctus</i> (Dol.).
<i>D. cinctus</i> Thor. |

Genus THALASSIUS, Simon.

Titurius, Sim. Nom. præocc.

Generic Diagnosis. Tarsal claws 3. Anterior row of eyes recurved; laterals halfway between anterior and posterior centrals. Teeth on lower margin of fang-groove 3. Tarsi of fourth pair of legs not furnished with spines beneath. Tibiæ i. and ii. with a double row of 4—4 spines beneath. Eyes all subequal. Clypeus as high as length of ocular area. Tibia of first pair of legs scarcely longer—often shorter—than carapace. Lateral pale bands on carapace sometimes absent, nor when present remote from margin.

II. b. List of Species already described, with Notes on their Identities.

1884. *Titurius fimbriatus* (Walck.).—Simon, Ann. Mus. Genov. xx. p. 328, ♀. Cape of Good Hope.
1884. *Titurius pallidus* (L. Koch).—Simon, Ann. Mus. Genov. xx. p. 328. Egypt and Abyssinia.
1884. *Titurius spinosissimus* (Karsch).—Simon, Ann. Mus. Genov. xx. p. 328. River Congo.
1897. *Thalassius unicolor* E. Simon in Donaldson Smith's 'Through Unknown African Countries,' p. 389.

Simon in this work selects as the type of *Titurius*, *Ctenus fimbriatus* Walck. Ins. Apt. i. p. 364, and includes *C. pallidus* L. K. and *C. spinosissimus* Karsch as congeneric with it.

In Rev. Suisse Zool. Genève, 1893, p. 327, Simon says of *Thalassius*:—"Ce genre renferme actuellement dix espèces: *fimbriatus* (*Ctenus*) Wlk., du Cap; *marginatus* (*Ctenus*) Wlk., des île

Salomon; *marginellus* Sim., de l'Indo-Chine; *pallidus* (*Ctenus*) L. Koch, d'Egypte; *spathularis* (*Dolomedes*) Van Hasselt, de Sumatra; *spinossissimus* (*Ctenus*) Karsch, du Congo; *syriacus* (*Ctenus*) Camb., de Syrie; ? *torvus* (*Ctenus*) Pavesi, du Scioa; et probablement *cinctus* (*Dolopœus*) Thorell, des îles Nikobars. Il est remplacé dans l'Amérique du sud par le genre *Ancylometes*, Bertkau (type *A. vulpes* Bertk.).”

Since *Thalassius*, Sim., both according to Simon's diagnosis and the type of *T. unicolor* Sim., now before me, possesses 3 teeth only on the lower margin of the fang-groove, I am unable to agree that *Dolomedes spathularis* Van Hasselt belongs to this genus, as Simon states (see above).

That it is one of the Cteniform Lycosidæ appears highly probable from the fact that the fourth pair of legs are the longest, though Van Hasselt makes no mention of the number of tarsal claws, which alone is a sure criterion.¹

Females.

- a. Carapace and abdomen unicolorous, without lateral pale bands. Tibia i. very slightly longer than carapace..... *T. unicolor* E. Sim.
- b. Carapace and abdomen with pale lateral bands. Tibia i. as long as or shorter than carapace.
 - i. Tibia i. as long as carapace.
 - * For form of vulva see Plate IV. *T. jakakari*, sp. n.
 - ** " " " " *T. cummingi*, sp. n.
 - ii. Tibia i. shorter than carapace.
 - * For form of vulva see Plate IV. *T. phipsoui*, sp. n.
 - ** " " " " *T. spenceri*, sp. n.

II. c. Descriptions of New Species.

THALASSIUS UNICOLOR Sim. (Plate IV. fig. 2.)

♀ ad. 20 mm. *Hab.* Sheik Hussein. Type in coll. Brit. Mus. Nat. Hist. London. Mr. Donaldson Smith's 'Through Unknown African Countries,' p. 389 (1897).

♀. Total length 20 mm. Carap. 9 × 7.5. Legs: i. 40—ii. 40—iii. 38—iv. 44. Pat. + tib. i. 14—iii. 11.75—iv. 14. Prot. i. 8.5—iii. 8—iv. 10.

Colour. Entirely unicolorous yellow-ochreous. Carapace and legs clothed with close, fine, hoary-white pubescence. Abdomen dull ferruginous yellow, unicolorous.

Structure. See generic diagnosis, p. 28. Vulva, Plate IV. fig. 2.

This form can be recognized by the absence of white bands on the carapace and abdomen.

THALASSIUS SPENCERI, sp. n. (Plate IV. figs. 1 a, b, & 8.)

♀. 17 mm. *Hab.* East London, S. Africa; coll. E. Baldwin Spencer. Type in Brit. Mus. Nat. Hist.

¹ Since writing the above a specimen obviously identical with Van Hasselt's *D. spathularis* has come before me from Deli, Sumatra. It is a true *Dolomedes* and not a *Thalassius* or *Dolopœus*, having four teeth on the fang-groove and three tarsal claws.

Total length 17 mm. Carap. 7×6 . Legs: i. 30—ii. 30—iii. 27—iv. 32.5. Pat. + tib. i. 10—iii. 8.5—iv. 10.5. Prot. i. 6.5—iii. 6—iv. 7.5.

Colour. Carapace, legs, and abdomen rich olive-brown. Carapace with broad white band on each side submarginal, as far from margin as width of band, not extending to the margin. Abdomen with band of silvery-white on each side extending from the anterior shoulders to the spinners. Ventral area pale yellow.

Structure. Similar to that of *T. unicolor*.

It is possible that this species is *Thalassius fimbriatus* (Walck.) Sim., but I can find no description which one can consider sufficient for identification. The species of this genus apparently are very closely allied, and in the form of the vulva are so much alike that identification becomes a difficult matter.

Vulva. See Plate IV. fig. 1 *b*. A single female was taken by Mr. H. A. Spencer at E. London, South Africa, and is now in the British Museum. Also another female from Sierra Leone. I can detect no difference between the two specimens.

THALASSIUS JAYAKARI, sp. n. (Plate IV. figs. 4, 9–11, & 14.)

♀ ad. 27 mm. *Hab.* Muscat, Arabia. Type in coll. Brit. Mus. Total length 27 mm. Carap. 10.5×8.5 . Legs wanting in some joints. Approximately the same as in *T. phipsoni*. Tibia i. 10.5.

Colour. Carapace, legs, and abdomen the same as in *T. phipsoni*.

Structure. Tibia i. as long as carapace. Vulva, see Plate IV. fig. 4.

An adult female was taken by Mr. A. G. Jayakar at Muscat on the Gulf of Oman, Arabia. Another adult female, much rubbed, so that the white scales of the lateral bands have been obliterated, was taken at Muscat by the same gentleman.

THALASSIUS CUMMINGI, sp. n. (Plate IV. fig. 3.)

♀ ad. 20 mm. *Hab.* Fao, Persian Gulf. Type in coll. Brit. Mus.

Total length 20 mm. Carap. 8×7 . Legs: i. 35—ii. 35—iii. 34—iv. 40. Tibia i. 8.

Colour. Carapace and legs red-brown, clothed with fine grey pubescence, the former with two lateral bands of white scales, not extending laterally to the margin. The base of each of the spines on the legs is set in a dark brown spot. Abdomen delicate olive-ochreous, clothed with fine grey pubescence, having a narrow band of white scales on each side; these bands, both on the carapace and the abdomen, are margined with a rich brown line. Protarsi fringed with fine hair.

Structure. Tibia i. as long as carapace. Vulva, see Plate IV. fig. 3.

An adult female of this beautiful species was taken by Mr. W. G. Cumming in the Persian Gulf. This gentleman has been good enough to contribute valuable data on the habits of this spider, thus giving us a knowledge of the habits of the genus, which

have not before been placed on record, so far as I am aware. Mr. Cumming relates that the spider was seated on the outside of the jolly-boat, above the water. When he tried to catch it, it took to the water and made for a plant near the boat; and on again attempting to capture it, it beat a retreat again to the boat, where it was eventually secured. This reminds me exactly of the habits of other *Lycotenuinæ* which I met with on the Amazons, as well as of the true dolomedine forms such as *Triclaria*.

THALASSIUS PHIPSONI, sp. n. (Plate IV. fig. 5.)

♀ ad. 27 mm. *Hab.* Makim, Dorun, India. Type in coll. Brit. Mus.

Total length 27 mm. Carap. 10.5×8.75 . Legs: i. 41—ii. 41—iii. 40—iv. 47. Tibia i. 9.5.

Colour. Carapace and legs ferruginous-grey, the former having two rich bands of white scales extending, longitudinally, from the anterior angles of the clypeus to a point halfway down the posterior declivity, laterally not extending to the margin. *Abdomen* entirely delicate ochreous-grey with olive tint, having a broad lateral band of rich white scales on each side.

Structure. Tibia i. shorter than carapace. Vulva, see Plate IV. fig. 5.

This fine species is very similar in general appearance to *T. jayakari*, but the difference of locality, and the difference in the vulva and in the relative length of the tibia of the first pair of legs compared with the carapace, prove that it is certainly a distinct species. An adult female was taken by Mr. H. M. Phipson at Makim and a young female at Dorun, in British India.

NILUS, Cambr., 1876.

NILUS CURTUS Cbr.

♀ juv. 5 mm. Spid. Egypt, p. 596, pl. lx. fig. 13, Alexandria.

“Eyes in two not very widely separated and almost equally curved transverse rows; the convexity of the curves directed forward, but the front row is the shortest. Each tarsus ends with three curved claws.”

From the figures on pl. lx. (*l. c.*) one would conclude the species to belong to some genus closely allied to *Dolomedes*.

Having carefully examined the type, I find it to be a three-clawed form with 2—2—2 long subtibial spines, with an eye-formula closely resembling *Thalassius*, and with three teeth on inferior margin of fang-groove. Whether it is identical with *Thalassius* or not one would not like to speak too positively from such very immature specimens, but judging from the number of spines beneath tibiæ i. and ii. one would say most probably not. Adult forms from the neighbourhood of Alexandria will probably settle the point.

EXPLANATION OF THE PLATES.

PLATE III.

- Fig. 1. *Ctenus velox*, p. 15, ♀. Abdomen, ventral area.
 2. *Ctenus velox*, ♀. Vulva.
 3. *Ctenus burtoni*, p. 25, ♂. *a.* Tibial spur of palpus. *b.* Do., lateral view. *c.* Tarsus of palpus, showing basal cusp. *d.* Tarsus and palpal organs. *e.* Palpal organs enlarged. *f.* Eyes from in front.
 4. *Ctenus carsoni*, p. 24, ♂. *a.* Eyes from in front. *b.* Tarsus of palpus from beneath.
 5. *Ctenus carsoni*. Spur of left tibia of palpus. *a.* From outside. *b.* Spur enlarged. *c.* From beneath.
 6. *Ctenus kingsleyi*, p. 21, ♀. Vulva.
 7. *Ctenus johnstoni*, p. 21, ♀. Vulva.
 8. *Ctenus occidentalis*, p. 22, ♀. Vulva.
 9. *Ctenus spenceri*, p. 23, ♀. Vulva.
 10. *Ctenus spenceri*, ♂. Tibia of palpus and base of tarsus, showing short spur.
 11. *Ctenus corniger*, p. 26, ♂. Tibia of palpus and base of tarsus, showing short spur.

PLATE IV.

- Fig. 1. *Thalassius spenceri*, p. 29, ♀. *a.* Eyes from in front. *b.* Vulva.
 2. *Thalassius unicolor*, p. 29, ♀. Vulva.
 3. *Thalassius cummingi*, p. 30, ♀. Vulva.
 4. *Thalassius jayakari*, p. 30, ♀. Vulva.
 5. *Thalassius phipsoni*, p. 31, ♀. Vulva.
 6. *Dolopæus cinctus*, p. 28, ♀. Eyes from in front.
 7. *Dolopæus cinctus*, ♀. Eyes from the side.
 8. *Thalassius spenceri*, p. 29. Eyes from the side.
 9. *Thalassius jayakari*, p. 30. Fang-groove.
 10. *Thalassius jayakari*. Tarsal claws.
 11. *Thalassius jayakari*. Protarsus and tarsus.
 12. *Ctenus marshalli*, p. 26, ♂. Palpal organs.
 13. *Ctenus marshalli*, ♂. Tibia of palpus, from above.
 14. *Thalassius jayakari*, p. 30, ♀. Spider, enlarged nearly one third.

3. On some Crustaceans from the South Pacific.—Part I.
Stomatopoda. By LANCELOT ALEXANDER BORRADAILE,
 M.A., Lecturer in Natural Sciences at Selwyn College,
 Cambridge¹.

[Received November 30, 1897.]

(Plates V. & VI.)

The collections of Crustaceans treated of in this paper are those of Mr. J. S. Gardiner, of Gonville and Caius College, Cambridge, from the islands of Funafuti (Ellice group) and Rotuma, and of Dr. A. Willey, from New Britain, the Loyalty Islands, and other South Pacific localities. Both of them were made in connection with the "Balfour Memorial Fund," Dr. Willey holding the Balfour Studentship and Mr. Gardiner being also aided by a grant from the fund.

¹ Communicated by Prof. ALFRED NEWTON, F.R.S., F.Z.S.